DOCUMENT RESUME

ED 295 814 SE 049 195

AUTHOR von Glasersfeld, Ernst
TITLE An Outsider's First Approach to Bogdanov's Theory of Knowledge.
PUB DATE 88
NOTE 9p.; Paper presented at the Annual Meeting of the US-USSR Seminar on Systems Theory and Cybernetics (2nd, Tallin, Estonia, USSR, May 1988).
PUB TYPE Viewpoints (120) -- Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Processes; *Cognitive Structures; *College Science; *Educational Philosophy; *Epistemology; Ethics; Higher Education; *Learning Processes; Learning Theories; Philosophy; Science Education
IDENTIFIERS *Bogdanov Theory of Knowledge

ABSTRACT

This paper analyzes Bogdanov's theory of knowledge as found in philosophical dialogues and essays. The style of Bogdanov's writing and his ideas on philosophy, science, scientific constructs, truth, human knowledge, objectivity and ethics are discussed. These ideas are compared to the constructivist view of knowledge. (CW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED295814

SECOND US-USSR SEMINAR ON SYSTEMS THEORY AND CYBERNETICS, Tallin, Estonia, USSR, May 1988

An Outsider's First Approach to Bogdanov's Theory of Knowledge

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Jack Lochhead

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Ernst von Glasersfeld
Scientific Reasoning Research Institute
Hasbrouck Lab., U. of Massachusetts
Amherst, MA 01003 USA

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

When I was asked to contribute to this meeting, I had just read the Oxford philosopher Edmond Wright's (1986) essay on Bogdanov. Wright's essay fascinated me for two reasons. There was the suggestion that Bogdanov had been attracted by Ernst Mach's approach to perception and had tried to overcome the big problem that is inherent in Mach's philosophy by introducing a notion of the social construction of objectivity; and the English philosopher also reported that Bogdanov's solution was nevertheless branded as solipsism. Having myself struggled with the paradox that Mach did not resolve, and having also been accused of solipsism, I of course wanted to find out how justified that accusation was in the case of Bogdanov. Promising to write a paper for this meeting seemed a good way of making sure that I would try to find out.

The "abstract" which I hurriedly sent to Stuart Umpleby must have raised your eyebrows. It was obviously not an abstract but rather a wishful announcement. In it, however, I did say that it was something of an impertinence for an outsider who is unable to read a Russian author's original texts, to say anything about that author. If I nevertheless proceeded, I hope you will realize that it was in the spirit of adventure rather than as a work of scholarship.

As far as I am concerned, the adventure was exceedingly rewarding. But before I try to share my delights with you, I want to stress just how limited the scope of the adventure was. At the same time that I obtained a translation of Bogdanov's "Tektology" (Gorelik 1980), I received a privately

SE 049 195

BEST COPY AVAILABLE

made German translation of four philosophical dialogues Bogdanov published in 1909 under the title "Science and Philosophy", as part of the 1st volume of his ***Essays on the Philosophy of Collectivism"***. These dialogues are a masterly concise, yet imaginative discussion of the main problems of Western epistemology. As such, they were exactly what I had been looking for, and I hope you will forgive me if the remarks I am about to make here concern what I gleaned from this crystalline fragment, rather than the wide-ranging, monumental opus of the *Tektology*.

The partners in Bogdanov's dialogue do not have fancy names like Hylas and Philonous in Berkeley's dialogues. They are simply called "A" and "B", but as with Berkeley, one of the two speakers raises questions and objections and the other tries to dispel them. This pattern seems to hold for quite some time. "A" acts like the eager student, while "B" provides answers which the reader assumes to be Bogdanov's. Towards the end, however, one realizes that this may be a slight misunderstanding: one gets the impression that "A" and "B", in fact, represent two ways of thinking that Bogdanov was struggling to reconcile in his own mind.

The two ways of thinking are the realist-materialist and the rationalist-idealist orientations in epistemology. The synthesis that Bogdanov attempts to achieve is a very interesting one that anticipates much of what has happened in the philosophy of science during the last 50 years.

Let me briefly pick out some of the things that I found particularly striking. Early in the dialogues, Bogdanov sets the stage by focusing on the apparent discrepancies between philosophy and science. He locates one major difference in the particular theories of knowledge that governed the two disciplines in the past. Philosophy, he suggests was concerned with establishing some "absolute Truth", whereas science is always concerned with "technics" -- by which he means ***praxis***, the realm of actually thinking and doing, or, in my interpretation, the realm of experience rather than the fictitious realm of ontological being.

One of several examples he cites is the notion of "conservation", and specifically the scientific construct of the "conservation of energy". He suggests that this was originally a purely philosophical (one might say, metaphysical) assumption which, in ancient Greece, found its expression in the precept that "in Nature nothing is created and nothing disappears". He goes on to say that science attains its "solidity" because by appliyng the law of conservation it succeeds in predicting observed phenomena. This is a remarkable analogy to a statement Hermann von Helmholtz wrote in 1881: "Only much later did I realized that causality is nothing but the presupposition of a lawful universe."[1] The analogy becomes apparent once a closer conceptual analysis has shown that the notion of causality is not feasible without the notion of individual identity, which is an elementary form of conservation.

From my constructivist point of view, this is, of course, extremely interesting, because in Bogdanov's development it becomes one of the basic elements from which he derives his revolutionary assertion that "Truth exists only in the human head." When Bogdanov says "Truth" he intends ***true knowledge***, and he is careful to explain that the truth he has in mind does not entail "correspondence" with an independent reality outside the human mind. He is fully aware of the fact that such a correspondence could never be tested. Indeed, he explicitly defines this correspondence as "the way in which any tool *correspsonds* (*entspricht*) to the material which one intends to affect (i.e. to modify or transform) with it."

Bogdanov deliberately demolishes the illusion that human knowledge could provide a "true image", a "reflection", or, as present-day philosophers would say, a "representation" of ontological reality. The correspondence Bogdanov has in mind is a ***functional*** or ***instrumental*** one. This leads him to hold that a tool that satisfactorily serves its purpose in a given context, does not become a bad or useless tool merely because one discovers that it is not useful in circumstances that lie outside its original range of application. This is

precisely the position that radical constructivism has adopted. You don't throw away your ordinary screw driver when you want to handle "Philips screws" as well. Instead, you now use two kinds of tool: one that handles screws with a single slot, and another that handles screws with a crossed incision.

Bogdanov exemplifies this by referring to the physicists' investigations of light. There are experiments that treat light as though it consisted of waves, and experiments that treat it as though it consisted of individual photons. Given that both "explanations" (today we might say "models") work very well in different situations, it would be foolish to discard either one. But Bogdanov explains that such a dual approach is not what physicists ***prefer.*** They would much rather have a single approach, because, as Bogdanov points out, it is "more difficult at the same time to master two tools, especially if one of them manifests an inherent contradiction to the other." The point Bogdanov makes very clear is this: Neither the wave theory nor the particle theory of light ***reflect*** something we could believe to be the ***ontological*** structure of light. But if, at some future date, a physicist were to create a unified, homogeneous theory of light, this, too, should not be taken as evidence that the "real" structure of light had been discovered. The value of such an invention would lie in the fact that it makes it simpler to handle (i.e. to predict and control) our experiences of the phenomenon we call "light". Insofar as our models, our theories, enable us to do this, they should be considered true knowledge. This is the concept of truth that was launched by the Pragmatists at much the same time as he published these dialogues (cf. Rorty 1983).

Bogdanov uses an original metaphor to illustrate what he means: "An animal's teeth are not a representation of its food."--You will appreciate that I was delighted when I read this--it creates a beautiful parallel to a metaphor I used when I wrote, a key is not a representation of the lock it opens (Glasersfeld, 1984). And of course Bogdanov, too, ar-

rived at this position via the analogy with the theory of evolution. Knowledge, for him, is ***adaptive***. Knowledge develops or, if you will, progresses, because praxis, which is the functional application of knowledge in the knower's field of experience, weeds out the concepts, theories, and models that do not serve the chosen purposes.

George Gorelik, in the Introduction to his translation, says:

> Bogdanov regards "truth" as relative and valid only within the limits of a particular epoch. He recognizes that with the addition of new facts, the hypotheses of tektology may be altered or even rejected. But even then, their usefulness will continue in gathering organizational experience and in the development of organizational methods, inasmuch as they "...facilitate the learning process of solving organizational problems in general." (1980, p.V)

This is the same warning I have always given my students: Constructivism is a way of thinking which, at this stage in the development of our ideas, seems the most adequate; like all we call "knowledge", it is not, and cannot be, the description of an ontological reality, and therefore it may change as our ways of experiencing and our purposes change.

It is not surprising that Bogdanov was accused of solipsism. This is invariably the first and profoundly emotional objection that is raised when a thinker proposes to separate a theory of knowing from all conjectures about the structure of ontology. The 2500 years since Socrates declared that ***if a subject perceives there must exist an object to be perceived***,[2] have forged an almost unshakable tradition. As Kant already suggested, to go against that tradition is at least as revolutionary as the Copernican move that pushed the human observer out of the center of the universe.

Characteristically, then as now, the reaction against any attempt to anchor knowledge in the world of experience rather than in the world of being, is misinterpreted as an attempt to deny the "existence" of any reality.

In my reading of these dialogues, Bogdanov does not deny an ontological reality--he merely argues that it is futile to believe that any organism whose only contact with that reality is living experience could come to ***know*** what that reality might be ***without the praxis of experiencing it.*** Like Berkeley--whose main epistemological work was entitled "A Treatise Concerning the Principles of Human Understanding", Bogdanov shows early in these dialogues that he is concerned with the knowledge, i.e., the understanding that can be derived from the praxis of living. But this focus on the essentially ***human*** character of human understanding has always been considered heretical by those who want to claim privileged access to a world as it might be without the contamination of the human ways and means of knowing.

Nevertheless, like the contemporary philosophers of science who have relativized the ontological basis of scientific knowledge, Bogdanov was concerned with "objectivity". Anticipating Kuhn and Barnes and Laudan, Bogdanov generated a different concept of objectivity. Instead of the traditional reference to the intangible thing-in-itself, objectivity was now to refer to the experience of the human collective. With one imaginative move, at the end of these dialogues, he steps out of subjective idealism and anchors his theory of knowledge in the social community of cognizing organisms. The last dialogue ends with the impassioned plea that the knower must feel to be, not a single self-contained entity but a cell of a timeless organism that has survived thousands of years in the struggle with the powerful elements of nature.

Bogdanov wrote this in 1909. Today, eighty years later, it still embodies the profoundly ethical attitude of those members of humanity who are aware of the seemingly inexorable destruction of our planet which the greed of industrial organizations and the blind application of technology have brought upon us. The dialogues thus end on an emotionally highly satisfying note. As an epistemological move, however, the reference to a social community did not shield Bogdanov

from criticism. As Edmond Wright observes:

> If he (Bogdanov) wants to reject the Solipsist label, it is not enough for him to assert, what is undoubtedly true, that it is the social dimension of man's encounters with nature that establish objectivity, if he has no principled account of how the objectivity of selves, and in particular, other selves, comes to be acknowledged. (Wright 1986, p.11)

Today, from a vantage point created by the extensive study of self-referential processes, it is a good deal easier to see that it is indeed possible to create a coherent theory of knowing that neither requires nor implies the "existence" of a structured ontological reality. Given that any investigation of ***how one knows*** can now be unequivocally categorized as a self-reflexive activity, the only indispensable ontological presuppositions are an active cognizing agent capable of reflection and some unspecified (and unspecifiable) raw material upon which the agent can impose its constructs.

Acknowledgements

I am indebted to Vadim Sadovsky for having first drawn my attention to Bogdanov's work; and I am deeply grateful to Michael Otte who arranged for Isolde Maschke-Luschberger to prepare an excellent German translation of the four dialogues on which much of this paper is based.

Footnotes

1. The statement is quoted by Franz Exner on p.663 of his *Vorlesungen über die physikalischen Grundlagen der Naturwissenschaften* (Vienna: Deuticke, 1919).

2. Socrates makes this fundamental assertion in Plato's *Theaetetus* (p.160 of the Stephanus edition, Paris, 1578).

References

Bogdanov, A. Nauka i filosofija, Dialogi (Science and philosophy), in *Ocerki filosofii kollektivizma (Essays on the philosophy of collectivism, Vol.1)*. St. Petersburg, 1909; pp.9-33.

Bogdanov, A. *Essays in tektology - The general science of organization* (Translation by George Gorelik). Salinas, CA: Intersystems Pubications, 1980.

Exner, F. *Vorlesungen über die Grundlagen der Naturwissenschaften.* Vienna: Deuticke, 1919.

Glasersfeld, E.von. Introduction to radical constructivism, in Paul Watzlawick (Ed.) *The invented reality.* New York: Norton, 1984 (German original, Piper, Munich, 1981).

Gorelik, G. (Translator) *Bogdanov's Essays in tektology - The general science of organization.* Salinas, CA: Intersystems Publications, 1980.

Rorty, R. *Consequences of Pragmatism.* Minneapolis: U.of Minnesota Press, 1983.

Wright, E. Dialectical perception: A synthesis of Lenin and Bogdanov. *Radical Philosophy*, 1986, 43, 9-16.